

Why is light so fast?

The short answer is that light is so fast because it doesn't go anywhere.

Like the mediators of gravity and magnetism, light is invisible and intangible. Therefore, we have no chance of discovering the secret agent that mediates light by running an experiment in the lab. What a theorist is required to do is imagine and visualize what entity could possibly be performing all the magical tricks that light is known to do.

For the last 400 or so years, researchers have imagined and visualized light as a stream of discrete particles affectionately called *photons*. By their very nature, particles can only flow in one direction. This means that simulating light as a stream of particles necessarily requires measuring the speed of a given photon in one direction: from A to B.

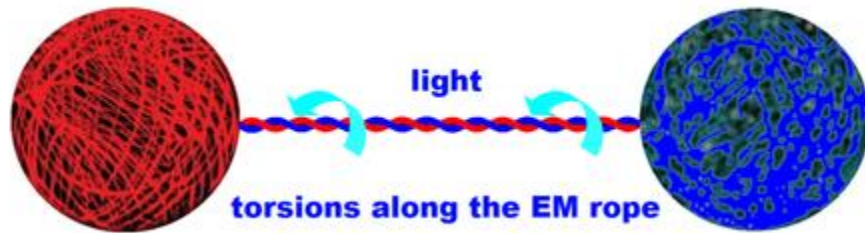
The photon hypothesis inevitably raises many questions.

1. Why do these particles travel 'straight'? A series of photons coming out of a spinning atom of our spinning Sun should collectively curve in space like droplets coming out of a water sprinkler.
2. How are these discrete beads related to wavelength as required by Maxwell's equations, Compton's Effect, Slit Experiment, and other amply verified phenomena?
3. And yes, why is the speed of these discrete particles so fast? What stops them from going faster? After all, theorists have postulated faster-than-light [tachyons](#) and routinely tell the world that two particles on opposite sides of the Universe physically affect each other instantaneously, a phenomenon known as [entanglement](#).

Light has consistently been measured and calculated to travel, propagate, oscillate, vibrate, etc., between two points in a vacuum at 300,000 km/s. The wave equation — ($c = f \lambda = 300,000 \text{ km/s}$) — implies that frequency (f) is inversely proportional to wavelength (λ). This means that if the frequency goes up, wavelength must come down.

Why would this be so? Why can't we increase both the frequency AND the wavelength and travel faster than little c ? What physical impediment is there? (*Incidentally, plane transverse waves widely used by theorists for the last 400 years also travel one way.*)

Today, we make a new assumption. Let us assume that light is not mediated by one-way waves or particles, but rather by an elongated pair of twined threads: a DNA-like double-helix that physically binds any two atoms.

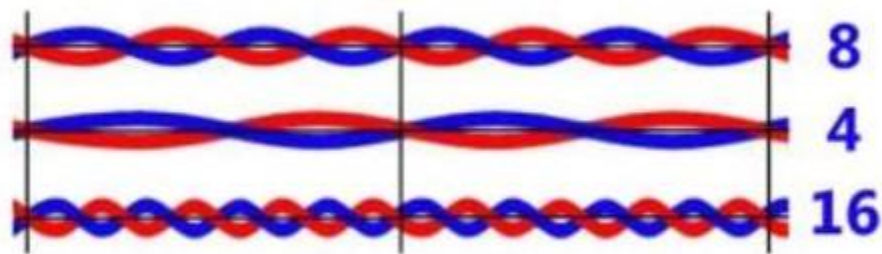


Under this model, light is not a flow of beads. Light consists of [torsions](#) ‘propagating’ along this taut medium. Actually, the straight rope-like mediator merely twirls in place.

This model explains:

1. Why light ‘travels straight’.
2. Why light travels in opposite directions simultaneously.
3. Why light is so fast (i.e., nothing beats a torsion ‘wave’ along a taut rope!)
4. Why frequency (# of links) is inversely proportional to wavelength (length of the link).
5. Corollary: the wave equation of light ($c = f \lambda$) is the equation of a rope.

$c = f \lambda$ is the equation of a rope!



of links is inversely proportional to linklength